SUGAR BEETS

PROBLEMS OF BEET CULTURE —IRRIGATION.

By Jesse H. Buffum.

Even when grappling with the rudimentary principles of irrigation, we are dealing with an art and an agricultural principle upon the application of which swing vast successes or unlimited failures. Scarcely can you name a more potent factor in the progress of American agriculture than this gigantic industry whose progress and almost universal application has been so marked within the last decade or two. We are rapidly gaining a conception of the possibilities of water artificially applied, and while present-day accomplishment has fully justified the loftiest expectations of earlier dreams, most welcome of all is the unquestioned development yet to come. Out of the practical acumen of the past is to grow a wider practice of the general principles of irrigation, and I derive greater satisfaction from the promise that farms and fields of small proportions are soon to recognize and utilize these peculiar advantages, than from any other aspect of our progress.

It is decidedly surprising that right in the face of the repeatedly demonstrated practicability of irrigation under all sorts of conditions affected by special environment that the majority of farmers throughout the land are ignoring the virtues of some sort of system of applying water at will. We know that many a farm possesses small streams or other available water supply that probably runs to waste, whose application to the field or garden might baffle some severe drought that otherwise would work the destruction of crops. I surmise that the gigantic scale on which this method of watering is done in the West has blinded the average farmer, east and west, to the advantages and possibilities of individual irrigation on a small scale. It is quite out of my intended way to point out the specific directions whereby individual farmers may establish irrigation systems of their own, as the problem in hand is to discuss the relation of irrigation to the sugar beet industry, but I cannot pass this phase of the subject by without reference to the possibilities in the small farmer's direction as yet untried. We shall witness greater advancement in this special line within the next twenty years than that shown in the whole general history of irrigation on this continent. I care not how ample the rainfall, or what natural conditions render your locality superior to many others, there is scarcely a region in the United States that does not need, and that will not have, within the next decade perhaps, successful irrigation systems of its own, for irrigation must be universally regarded as a method of soil improvement rather than a remedy for impoverished conditions, before approximate success can crown the efforts of the irrigator in whatever clime.

It is highly significant, and the fact is witnessed to in every direction, that irrigation and sugar beets go hand in hand. The two seem almost inseparable, yet they are not, or should not be. But any adequate discussion of the sugar beet industry that comprehends all phases of method and culture would be far from complete without an exhaustive consideration of applied water to this valuable crop. I suppose the real reason why the two developments have come concurrently lies in the fact that irrigation impels intensive agriculture, and if there is any one crop above all others that is essentially synonymous with the intensive idea, the sugar beet is that crop. Irrigation put in force demands that nothing short of the greatest possible profit can warrant its introduction. Let us be bold enough to say that no general crop produced can be made to pay as well as sugar beets, and wherever they do not maintain this standard, nothing but the grower or the conditions under his control is at fault. It is one and the same thing—intensive practice—that scares the indolent farmer and encourages and inspires the progressive and ambitious agriculturist. So, largely, to irrigation we owe the great advancement of sugar beets as a successful agricultural product, at least in many regions where without this artificial moisture, always on tap, the best crop in all the continent could not possibly be missed. And we owe it to ourselves and to the industry at large to understand as fully as may be possible the exact relation that irrigation should bear to the production of beets.

Why do we irrigate? Is it to give the plants a drink, or do we act on the desire to keep the soil in fit physical condition? While we are at it let us acknowledge that in practice it is lamentable to admit that we are prompted usually by the apparent suffering of the plant; wherein we make the one fatal mistake and abuse the intended benefits of irrigation. This is passing. Let us first get down into the soil, for it is impossible, to my mind, to get anywhere near a reasonable understanding of such a subject without first attaining some knowledge of the principles involved. Why we irrigate, is the most important question of all, so we must at the outset determine what becomes of our water and what it is going to perform, else we work at random when we turn water onto our soil. We are going to discover that unintelligent application of water works destruction as often as it results in good.

Soil is a great water retainer. It will absorb and temporarily hold moisture to a surprising degree, clay, for example, being an absorbant al-